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SEQUENCE LISTING

(1) GENERAL INFORMATION

- (i) APPLICANT: Kino, Kohsuke
Dairiki, Kazuo
- (ii) TITLE OF THE INVENTION: T-CELL EPITOPE PEPTIDES
- (iii) NUMBER OF SEQUENCES: 90
- (iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Fish & Richardson P.C.
(B) STREET: 225 Franklin Street
(C) CITY: Boston
(D) STATE: MA
(E) COUNTRY: USA
(F) ZIP: 02110-2804
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Diskette
(B) COMPUTER: IBM Compatible
(C) OPERATING SYSTEM: DOS
(D) SOFTWARE: FastSEQ for Windows Version 2.0
- (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: 09/202,464
(B) FILING DATE: 14-DEC-1998
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: WO JP97/02031
(B) FILING DATE: 12-JUN-1997

(A) APPLICATION NUMBER: JP 8/153527
(B) FILING DATE: 14-JUN-1996
- (viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Fraser, Ph.D., J.D., Janis K.
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(C) REFERENCE/DOCKET NUMBER: 06501-024001
- (ix) TELECOMMUNICATION INFORMATION:
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 354 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Asp Asn Pro Ile Asp Ser Cys Trp Arg Gly Asp Ala Asn Trp Asp Gln
1 5 10 15
Asn Arg Met Lys Leu Ala Asp Cys Ala Val Gly Phe Gly Ser Ser Ala
20 25 30

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Met Gly Gly Lys Gly Gly Ala Phe Tyr Thr Val Thr Ser Ser Asp Asp
   35                               40                               45
Asp Pro Val Asn Pro Ala Pro Gly Thr Leu Arg Tyr Gly Ala Thr Arg
   50                               55                               60
Glu Arg Ser Leu Trp Ile Ile Phe Ser Lys Asn Leu Asn Ile Lys Leu
   65                               70                               75                               80
Asn Met Pro Leu Tyr Ile Ala Gly Asn Lys Thr Ile Asp Gly Arg Gly
   85                               90                               95
Ala Glu Val His Ile Gly Asn Gly Gly Pro Cys Leu Phe Met Arg Thr
  100                               105                               110
Val Ser His Val Ile Leu His Gly Leu Asn Ile His Gly Cys Asn Thr
  115                               120                               125
Ser Val Ser Gly Asn Val Leu Ile Ser Glu Ala Ser Gly Val Val Pro
  130                               135                               140
Val His Ala Gln Asp Gly Asp Ala Ile Thr Met Arg Asn Val Thr Asp
  145                               150                               155                               160
Val Trp Ile Asp His Asn Ser Leu Ser Asp Ser Ser Asp Gly Leu Val
  165                               170                               175
Asp Val Thr Leu Ala Ser Thr Gly Val Thr Ile Ser Asn Asn His Phe
  180                               185                               190
Phe Asn His His Lys Val Met Leu Leu Gly His Ser Asp Ile Tyr Ser
  195                               200                               205
Asp Asp Lys Ser Met Lys Val Thr Val Ala Phe Asn Gln Phe Gly Pro
  210                               215                               220
Asn Ala Gly Gln Arg Met Pro Arg Ala Arg Tyr Gly Leu Ile His Val
  225                               230                               235                               240
Ala Asn Asn Asn Tyr Asp Pro Trp Ser Ile Tyr Ala Ile Gly Gly Ser
  245                               250                               255
Ser Asn Pro Thr Ile Leu Ser Glu Gly Asn Ser Phe Thr Ala Pro Asn
  260                               265                               270
Asp Ser Asp Lys Lys Glu Val Thr Arg Arg Val Gly Cys Glu Ser Pro
  275                               280                               285
Ser Thr Cys Ala Asn Trp Val Trp Arg Ser Thr Gln Asp Ser Phe Asn
  290                               295                               300
Asn Gly Ala Tyr Phe Val Ser Ser Gly Lys Asn Glu Gly Thr Asn Ile
  305                               310                               315                               320
Tyr Asn Asn Asn Glu Ala Phe Lys Val Glu Asn Gly Ser Ala Ala Pro
  325                               330                               335
Gln Leu Thr Lys Asn Ala Gly Val Leu Thr Cys Ile Leu Ser Lys Pro
  340                               345                               350
Cys Ser

```

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 514 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

```

Met Gly Met Lys Phe Met Ala Ala Val Ala Phe Leu Ala Leu Gln Leu
   1           5           10           15
Ile Val Met Ala Ala Ala Glu Asp Gln Ser Ala Gln Ile Met Leu Asp
   20           25           30
Ser Asp Ile Glu Gln Tyr Leu Arg Ser Asn Arg Ser Leu Lys Lys Leu
   35           40           45
Val His Ser Arg His Asp Ala Ala Thr Val Phe Asn Val Glu Gln Tyr
   50           55           60

```

Asn Pro

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(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Asp Asn Pro Ile Asp Ser Cys Trp Arg Gly Asp Ala Asn Trp Asp Gln
1 5 10 15
Asn Arg Met Lys
20

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Asp Ala Asn Trp Asp Gln Asn Arg Met Lys Leu Ala Asp Cys Ala Val
1 5 10 15
Gly Phe Gly Ser
20

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Asp Cys Ala Val Gly Phe Gly Ser Ser Ala Met Gly Gly Lys
1 5 10 15
Gly Gly Ala Phe
20

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Ala Met Gly Gly Lys Gly Gly Ala Phe Tyr Thr Val Thr Ser Ser
1 5 10 15

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Asp Asp Asp Pro
20

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Tyr Thr Val Thr Ser Ser Asp Asp Asp Pro Val Asn Pro Ala Pro Gly
1 5 10 15
Thr Leu Arg Tyr
20

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Val Asn Pro Ala Pro Gly Thr Leu Arg Tyr Gly Ala Thr Arg Glu Arg
1 5 10 15
Ser Leu Trp Ile
20

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Gly Ala Thr Arg Glu Arg Ser Leu Trp Ile Ile Phe Ser Lys Asn Leu
1 5 10 15
Asn Ile Lys Leu
20

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ile Phe Ser Lys Asn Leu Asn Ile Lys Leu Asn Met Pro Leu Tyr Ile
1 5 10 15
Ala Gly Asn Lys
20

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Asn Met Pro Leu Tyr Ile Ala Gly Asn Lys Thr Ile Asp Gly Arg Gly
1 5 10 15
Ala Glu Val His
20

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Thr Ile Asp Gly Arg Gly Ala Glu Val His Ile Gly Asn Gly Gly Pro
1 5 10 15
Cys Leu Phe Met
20

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Ile Gly Asn Gly Gly Pro Cys Leu Phe Met Arg Thr Val Ser His Val
1 5 10 15
Ile Leu His Gly
20

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Arg Thr Val Ser His Val Ile Leu His Gly Leu Asn Ile His Gly Cys
1 5 10 15
Asn Thr Ser Val
20

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Leu Asn Ile His Gly Cys Asn Thr Ser Val Ser Gly Asn Val Leu Ile
1 5 10 15
Ser Glu Ala Ser
20

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Ser Gly Asn Val Leu Ile Ser Glu Ala Ser Gly Val Val Pro Val His
1 5 10 15
Ala Gln Asp Gly
20

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gly Val Val Pro Val His Ala Gln Asp Gly Asp Ala Ile Thr Met Arg
1 5 10 15
Asn Val Thr Asp
20

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids

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(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Asp Ala Ile Thr Met Arg Asn Val Thr Asp Val Trp Ile Asp His Asn
1 5 10 15
Ser Leu Ser Asp
20

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Val Trp Ile Asp His Asn Ser Leu Ser Asp Ser Ser Asp Gly Leu Val
1 5 10 15
Asp Val Thr Leu
20

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Ser Ser Asp Gly Leu Val Asp Val Thr Leu Ala Ser Thr Gly Val Thr
1 5 10 15
Ile Ser Asn Asn
20

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Ala Ser Thr Gly Val Thr Ile Ser Asn Asn His Phe Phe Asn His His
1 5 10 15
Lys Val M t Leu
20

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(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

His Phe Phe Asn His His Lys Val Met Leu Leu Gly His Ser Asp Ile
1 5 10 15
Tyr Ser Asp Asp
20

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Leu Gly His Ser Asp Ile Tyr Ser Asp Asp Lys Ser Met Lys Val Thr
1 5 10 15
Val Ala Phe Asn
20

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Lys Ser Met Lys Val Thr Val Ala Phe Asn Gln Phe Gly Pro Asn Ala
1 5 10 15
Gly Gln Arg Met
20

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Gln Phe Gly Pro Asn Ala Gly Gln Arg Met Pro Arg Ala Arg Tyr Gly
1 5 10 15

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Leu Ile His Val
20

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Pro Arg Ala Arg Tyr Gly Leu Ile His Val Ala Asn Asn Asn Tyr Asp
1 5 10 15
Pro Trp Ser Ile
20

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Ala Asn Asn Asn Tyr Asp Pro Trp Ser Ile Tyr Ala Ile Gly Gly Ser
1 5 10 15
Ser Asn Pro Thr
20

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Tyr Ala Ile Gly Gly Ser Ser Asn Pro Thr Ile Leu Ser Glu Gly Asn
1 5 10 15
Ser Phe Thr Ala
20

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Ile Leu Ser Glu Gly Asn Ser Phe Thr Ala Pro Asn Asp Ser Asp Lys
1 5 10 15
Lys Glu Val Thr
20

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Pro Asn Asp Ser Asp Lys Lys Glu Val Thr Arg Arg Val Gly Cys Glu
1 5 10 15
Ser Pro Ser Thr
20

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Arg Arg Val Gly Cys Glu Ser Pro Ser Thr Cys Ala Asn Trp Val Trp
1 5 10 15
Arg Ser Thr Gln
20

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Cys Ala Asn Trp Val Trp Arg Ser Thr Gln Asp Ser Phe Asn Asn Gly
1 5 10 15
Ala Tyr Phe Val
20

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Asp Ser Phe Asn Asn Gly Ala Tyr Phe Val Ser Ser Gly Lys Asn Glu
1 5 10 15
Gly Thr Asn Ile
20

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Ser Ser Gly Lys Asn Glu Gly Thr Asn Ile Tyr Asn Asn Asn Glu Ala
1 5 10 15
Phe Lys Val Glu
20

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Tyr Asn Asn Asn Glu Ala Phe Lys Val Glu Asn Gly Ser Ala Ala Pro
1 5 10 15
Gln Leu Thr Lys
20

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Asn Gly Ser Ala Ala Pro Gln Leu Thr Lys Asn Ala Gly Val Leu Thr
1 5 10 15
Cys Ile Leu Ser
20

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids

(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Asn Ala Gly Val Leu Thr Cys Ile Leu Ser Lys Pro Cys Ser
1 5 10

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Met Gly Met Lys Phe Met Ala Ala Val Ala Phe Leu Ala Leu Gln Leu
1 5 10 15
Ile Val Met Ala
20

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Phe Leu Ala Leu Gln Leu Ile Val Met Ala Ala Ala Glu Asp Gln Ser
1 5 10 15
Ala Gln Ile Met
20

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ala Ala Glu Asp Gln Ser Ala Gln Ile Met Leu Asp Ser Asp Ile Glu
1 5 10 15
Gln Tyr Leu Arg
20

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids

(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

```

Leu Asp Ser Asp Ile Glu Gln Tyr Leu Arg Ser Asn Arg Ser Leu Lys
 1           5           10           15
Lys Leu Val His
                20

```

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

```

Ser Asn Arg Ser Leu Lys Lys Leu Val His Ser Arg His Asp Ala Ala
 1           5           10           15
Thr Val Phe Asn
                20

```

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

```

Ser Arg His Asp Ala Ala Thr Val Phe Asn Val Glu Gln Tyr Gly Ala
 1           5           10           15
Val Gly Asp Gly
                20

```

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

```

Val Glu Gln Tyr Gly Ala Val Gly Asp Gly Lys His Asp Ser Thr Glu
 1           5           10           15
Ala Phe Ala Thr
                20

```

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(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Lys His Asp Ser Thr Glu Ala Phe Ala Thr Thr Trp Asn Ala Ala Cys
1 5 10 15
Lys Lys Ala Ser
20

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Thr Trp Asn Ala Ala Cys Lys Lys Ala Ser Ala Val Leu Leu Val Pro
1 5 10 15
Ala Asn Lys Lys
20

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Ala Val Leu Leu Val Pro Ala Asn Lys Lys Phe Phe Val Asn Asn Leu
1 5 10 15
Val Phe Arg Gly
20

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Phe Phe Val Asn Asn Leu Val Phe Arg Gly Pro Cys Gln Pro His Leu
1 5 10 15

Ser Phe Lys Val
20

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Pro Cys Gln Pro His Leu Ser Phe Lys Val Asp Gly Thr Ile Val Ala
1 5 10 15
Gln Pro Asp Pro
20

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Asp Gly Thr Ile Val Ala Gln Pro Asp Pro Ala Arg Trp Lys Asn Ser
1 5 10 15
Lys Ile Trp Leu
20

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Ala Arg Trp Lys Asn Ser Lys Ile Trp Leu Gln Phe Ala Gln Leu Thr
1 5 10 15
Asp Phe Asn Leu
20

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Gln Phe Ala Gln Leu Thr Asp Phe Asn Leu Met Gly Thr Gly Val Ile
 1 5 10 15
 Asp Gly Gln Gly
 20

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Met Gly Thr Gly Val Ile Asp Gly Gln Gly Gln Gln Trp Trp Ala Gly
 1 5 10 15
 Gln Cys Lys Val
 20

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Gln Gln Trp Trp Ala Gly Gln Cys Lys Val Val Asn Gly Arg Thr Val
 1 5 10 15
 Cys Asn Asp Arg
 20

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Val Asn Gly Arg Thr Val Cys Asn Asp Arg Asn Arg Pro Thr Ala Ile
 1 5 10 15
 Lys Ile Asp Tyr
 20

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

```

Asn Arg Pro Thr Ala Ile Lys Ile Asp Tyr Ser Lys Ser Val Thr Val
 1           5           10           15
Lys Glu Leu Thr
                20

```

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

```

Ser Lys Ser Val Thr Val Lys Glu Leu Thr Leu Met Asn Ser Pro Glu
 1           5           10           15
Phe His Leu Val
                20

```

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

```

Leu Met Asn Ser Pro Glu Phe His Leu Val Phe Gly Glu Cys Glu Gly
 1           5           10           15
Val Lys Ile Gln
                20

```

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

```

Phe Gly Glu Cys Glu Gly Val Lys Ile Gln Gly Leu Lys Ile Lys Ala
 1           5           10           15
Pro Arg Asp Ser
                20

```

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids

(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gly Leu Lys Ile Lys Ala Pro Arg Asp Ser Pro Asn Thr Asp Gly Ile
1 5 10 15
Asp Ile Phe Ala
20

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Pro Asn Thr Asp Gly Ile Asp Ile Phe Ala Ser Lys Arg Phe His Ile
1 5 10 15
Glu Lys Cys Val
20

(2) INFORMATION FOR SEQ ID NO:62:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Ser Lys Arg Phe His Ile Glu Lys Cys Val Ile Gly Thr Gly Asp Asp
1 5 10 15
Cys Ile Ala Ile
20

(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ile Gly Thr Gly Asp Asp Cys Ile Ala Ile Gly Thr Gly Ser Ser Asn
1 5 10 15
Ile Thr Ile Lys
20

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(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Gly Thr Gly Ser Ser Asn Ile Thr Ile Lys Asp Leu Ile Cys Gly Pro
1 5 10 15
Gly His Gly Ile
20

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Asp Leu Ile Cys Gly Pro Gly His Gly Ile Ser Ile Gly Ser Leu Gly
1 5 10 15
Arg Asp Asn Ser
20

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Ser Ile Gly Ser Leu Gly Arg Asp Asn Ser Arg Ala Glu Val Ser His
1 5 10 15
Val His Val Asn
20

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Arg Ala Glu Val Ser His Val His Val Asn Arg Ala Lys Phe Ile Asp
1 5 10 15

Thr Gln Asn Gly
20

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Arg Ala Lys Phe Ile Asp Thr Gln Asn Gly Leu Arg Ile Lys Thr Trp
1 5 10 15
Gln Gly Gly Ser
20

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Leu Arg Ile Lys Thr Trp Gln Gly Gly Ser Gly Leu Ala Ser Tyr Ile
1 5 10 15
Thr Tyr Glu Asn
20

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Gly Leu Ala Ser Tyr Ile Thr Tyr Glu Asn Val Glu Met Ile Asn Ser
1 5 10 15
Glu Asn Pro Ile
20

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: prot in

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Val Glu Met Ile Asn Ser Glu Asn Pro Ile Leu Ile Asn Gln Phe Tyr
1 5 10 15
Cys Thr Ser Ala
20

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Leu Ile Asn Gln Phe Tyr Cys Thr Ser Ala Ser Ala Cys Gln Asn Gln
1 5 10 15
Arg Ser Ala Val
20

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ser Ala Cys Gln Asn Gln Arg Ser Ala Val Gln Ile Gln Gly Val Thr
1 5 10 15
Tyr Lys Asn Ile
20

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Gln Ile Gln Gly Val Thr Tyr Lys Asn Ile His Gly Thr Ser Ala Thr
1 5 10 15
Ala Ala Ala Ile
20

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

His	Gly	Thr	Ser	Ala	Thr	Ala	Ala	Ala	Ile	Gln	Leu	Met	Cys	Ser	Asp
1				5					10					15	
Ser	Val	Pro	Cys												
			20												

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Gln	Leu	Met	Cys	Ser	Asp	Ser	Val	Pro	Cys	Thr	Gly	Ile	Gln	Leu	Ser
1				5					10					15	
Asn	Val	Ser	Leu												
			20												

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Thr	Gly	Ile	Gln	Leu	Ser	Asn	Val	Ser	Leu	Lys	Leu	Thr	Ser	Gly	Lys
1				5					10					15	
Pro	Ala	Ser	Cys												
			20												

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Lys	Leu	Thr	Ser	Gly	Lys	Pro	Ala	Ser	Cys	Val	Asp	Lys	Asn	Ala	Arg
1				5					10					15	
Gly	Phe	Tyr	Ser												
			20												

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Val Asp Lys Asn Ala Arg Gly Phe Tyr Ser Gly Arg Leu Ile Pro Thr
1 5 10 15
Cys Lys Asn Leu
20

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly Arg Leu Ile Pro Thr Cys Lys Asn Leu Arg Pro Gly Pro Ser Pro
1 5 10 15
Lys Glu Phe Glu
20

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Arg Pro Gly Pro Ser Pro Lys Glu Phe Glu Leu Gln Gln Gln Pro Thr
1 5 10 15
Thr Val Met Asp
20

(2) INFORMATION FOR SEQ ID NO:82:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Leu Gln Gln Gln Pro Thr Thr Val Met Asp Glu Asn Lys Gly Ala Cys
1 5 10 15
Ala Lys Gly Asp
20

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(2) INFORMATION FOR SEQ ID NO:83:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Glu Asn Lys Gly Ala Cys Ala Lys Gly Asp Ser Thr Cys Ile Ser Leu
1 5 10 15
Ser Ser Ser Pro
20

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Ser Thr Cys Ile Ser Leu Ser Ser Ser Pro Pro Asn Cys Lys Asn Lys
1 5 10 15
Cys Lys Gly Cys
20

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Pro Asn Cys Lys Asn Lys Cys Lys Gly Cys Gln Pro Cys Lys Pro Lys
1 5 10 15
Leu Ile Ile Val
20

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln Pro Cys Lys Pro Lys Leu Ile Ile Val His Pro Asn Lys Pro Gln
1 5 10 15

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Asp Tyr Tyr Pro
20

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

His Pro Asn Lys Pro Gln Asp Tyr Tyr Pro Gln Lys Trp Val Cys Ser
1 5 10 15
Cys His Asn Lys
20

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln Lys Trp Val Cys Ser Cys His Asn Lys Ile Tyr Asn Pro
1 5 10

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Phe Phe Val Asn Asn Leu Val Phe Arg Gly Pro Cys Gln Pro His Leu
1 5 10 15
Pro Phe Lys Val
20

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Pro Cys Gln Pro His Leu Pro Phe Lys Val Asp Gly Thr Ile Val Ala
1 5 10 15
Gln Pro Asp Pro
20